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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/673,555	02/13/2001	Jacques Benveniste	9320.113USWO	8541
23552	7590	04/13/2005	EXAMINER	
MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			CHUNDURU, SURYAPRABHA	
			ART UNIT	PAPER NUMBER
			1637	
DATE MAILED: 04/13/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/673,555

Applicant(s)

BENVENISTE ET AL.

Examiner

Suryaprabha Chunduru

Art Unit

1637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 and 33-76 is/are pending in the application.
- 4a) Of the above claim(s) 24-27, 36-41 and 65-68 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23, 28-35, 42-64 and 69-76 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Applicants' amendment and response to the office action filed on February 16, 2005 has been entered.
2. Claim 1 is amended. Claims 1-23, 28-31, 33-35, 42-64, 69-76 are pending. Claims 24-27, 36-41, 65-68 are withdrawn in view of restriction/ election. Claim 32 is cancelled.
3. Applicants' response to the office action is fully considered and found persuasive in part. All arguments have been fully considered and thoroughly reviewed, and deemed persuasive in part, in view of the arguments and amendment. This action is made FINAL necessitated by amendment.

New Grounds of Rejection necessitated by Amendment

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) The invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-17, 21-23, 28-31, 33-35 are rejected under 35 U.S.C. 102(e) as being anticipated by Kayyem (USPN. 6,063,573).

Kayyem teaches a process of claims 1-2, 9, 21, 23, 30, for amplifying a reaction between a ligand (target nucleic acid) and a receptor (probe) of a ligand-receptor pair (the of target-probe binding (see col. 61, line 50-65) comprising

(a) producing or acquiring electromagnetic signals picked up from at least one of said ligand or said receptor, said acquiring comprises

(i) placing at least one of said ligand (target nucleic acid) or said receptor (capture probe) in a zone subjected to an excitation field of an electromagnetic type wherein said excitation signal having a frequency of 10 to 200 Hz (between 20Hz and about 20,000Hz) (see col. 3, line 42-62, col. 61, line 50-65);

(ii) converting the fields resulting from the interactions of at least one of said ligand or receptor by means of a transducer or acquisition sensor receiving the resulting fields (see col. 61, line 66-67, col. 62, 1-65);

(b) bringing said ligand and said receptor into contact in conditions suitable to allow their reaction (binding) (see col. 61, line 46-49);

(c) applying signals produced from at least one of said ligand or receptor, applied prior to simultaneously with said ligand and said receptor being brought into contact (col. 61, line 50-65).

With regard to claim 3, 13, Kayyem teaches applying electromagnetic signal is achieved by exposing a solution or suspension comprising said at least one reagent (see col. 53, line 13-21);

With regard to claims 4-5, 10-12, Kayyem teaches that said application of electromagnetic signal is achieved by diluting or dissolving (mixing) solution comprising at least one said ligand or receptor (see col. 55, line 1-19);

With regard to claim 6, 14, Kayyem teaches that said solvent to dissolve or dilute said ligand or receptor comprises water physiological solute (aqueous solution) (see col. 55, line 1-5);

With regard to claims 7-8, 31, Kayyem teaches that said electromagnetic signal comprises signal radiated by an electromagnetic radiation source (see col. 56, line 20-64);

With regard to claims 15-17, Kayyem teaches that said process further comprises acquiring electromagnetic signal, recording, and retrieving data and detecting, or measuring the complexes resulting from said reaction (see col. 62, line 5-67, col. 63, line 1-67, col. 64, line 1-35);

With regard to claim 22, Kayyem teaches that concentrations of said ligand and said receptor are chosen so as to be sufficient to obtain a ligand-receptor complex (1:1 correlation) detectable in the absence of the application of electromagnetic signal (see col. 66, line 45-55);

With regard to claims 28-30, Kayyem teaches that the process is used in biological diagnostics in human and bacteriological control in food, research and field settings (see col. 65, line 58-67, col. 66, line 1-29);

With regard to claims 33-34, Kayyem teaches said excitation signal has uniform spectral changes and the excitation field is isolated fields coming from environment (see col. 56, line 46-67);

With regard to claim 35, Kayyem teaches that applying signals from said first transducer, by means of a second transducer, to a receptor system in such a way that the biological activity is

modified (see col. 58, line 20-50). Thus the disclosure of Kayyem meets the limitations in the instant claims.

Response to Arguments

5. Applicants' response to the office action is fully considered and found persuasive in part.

6. With reference to the rejection under 35 USC 102(e), Applicants arguments are fully considered and the rejection is withdrawn herein in view of the arguments and verification of the priority document.

7. The following rejection was made in the previous office action under 35 USC 102(b):

Claims 1-23, 28-31, 33-35 and 42-64, 69-79 are rejected under 35 U.S.C. 102(b) as being anticipated by Benveniste et al. (J Allergy Clin Immunol., vol. 99 (1), part 2, pp S175, 1997).

Benveniste et al. teach a method of claims 1-2, 9, 21, 23, 30-35, 42-43, 61-64, 71-79 amplifying electromagnetic signal of biological molecules wherein Benveniste et al. disclose that the method comprises bringing into contact ligand (agonist) with receptor (target cell), applying electromagnetic signals in a solvent (water) to detect molecular activity (see page S175, column 1, abstract 705). Further, Benveniste et al. disclose recording digital 22kHz (kilo hertz) by a transducer and computer with soundcard (see page S175, column 1, abstract 705); with regard to claims 3-20, 44-60, Benveniste et al. teach said signal applied to a solution comprising ligand or receptor (see page S175, column 1, abstract 705); with regard to claims 28-29, 69-70, Benveniste et al. teach that the method can be applied to chemistry, biology and medicine. Thus the disclosure of Benveniste et al. meets the limitations in the instant claims.

Response to arguments:

With reference to the above rejection under 35 USC 102(b) as anticipated by Benveniste et al. (J.Allergy Clin Immunol., Vol. 99(1), part 2, ppS175, 1997), Applicants arguments and amendment are fully considered and found not persuasive. Applicants argue that the excitation signal of claim 1 is not a signal representative of a biological active element and Benvensite does not teach exposure of biological element to EM radiation and also argue that ovalbulmin is not a ligand according to claim 1. Applicants' arguments are fully considered and found not persuasive because arguments are based on biologically active element, which is not in the instant claims rather claim comprises a ligand and/ or a receptor, and thus solution-comprising ovalbumin is considered as a ligand. Further the instant claims encompass digitized or non digitized EM radiation under 22 KHZ because the instant claims recite signals acquired or produced from EM radiation (in general comprises both digitized and non-digitized) and represents the signal generated by at least one of the said ligand or receptor and claim 1 recites signals applied prior to, simultaneously with or subsequent to said ligand and said receptor being brought into contact. Thus claims read on signal generated from ovalbumin (ligand), prior to, simultaneously with or subsequent to applying the signal. Claims 73-76 fall with in the scope of this rejection as discussed above. Thus the rejection is maintained herein.

Conclusion

No claims are allowable.


Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

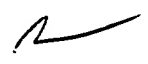
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Suryaprabha Chunduru whose telephone number is 571-272-0783. The examiner can normally be reached on 8.30A.M. - 4.30P.M , Mon - Friday,.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on 571-272-0782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Suryaprabha Chunduru
Examiner
Art Unit 1637


JEFFREY FREDMAN
PRIMARY EXAMINER
4/18/05